SUMMARY OF THE DUTCH ELM DISEASE SITUATION IN THE UNITED STATES AS OF JUNE 20, 1934.

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The Dutch elm disease has been found in five States; namely, Connecticut, Maryland, Ohio, New Jersey, and New York. The disease is of foreign origin and is caused by the fungus Graphium ulmi (the imperfect stage of Ceratostomella ulmi).

The first finding of the disease in this country was in 1930 when three cases were located in Cleveland, and one in Cincinnati, Ohio. Persistent scouting and eradication efforts in Ohio discovered Graphium-diseased trees as follows:

	1930	1931	1932	1933	All
Cleveland	3	4	0	1	8
Cincinnati	1	0	0	0	1
All	4	4	0	1	9

It appears possible that the Ohio outbreak has been eradicated. The European elm bark beetles, generally considered to be the agencies of spread of the disease in Europe, have not been found established in the Ohio area. It is thought that these beetles might have been instrumental in spreading the disease from infected imported burl elm veneer logs that were infested with the beetles, but that the insects did not become established in Ohio and in their absence the disease did not spread beyond the original infection. It is recognized, of course, that the disease might be spread by other insects and by other means.

During 1933 a single diseased tree was found in Baltimore, Md. The tree was promptly destroyed. Again the European elm bark beetles were apparently not established at Baltimore and no spread of the disease has been confirmed.

An extensive outbreak of the disease was found in 1933 involving about 1,400 square miles extending out from the port of New York. Up to the present time more than 1,700 diseased trees have been found. The latest report in which the data are separated shows a total of 1,706 diseased trees in the infected area by States as follows: New Jersey, 1,427; New York, 275; and Connecticut 4.

In this area the smaller European elm bark beetle Scolytus multistriatus was already well established and the disease has spread rapidly.

During the past winter a considerable force of CWA workers were engaged in the area with the objective of locating and destroying the diseased trees insofar as practicable in the dormant season. Notwithstanding protracted adverse winter weather conditions, satisfactory work was accomplished and heavy spread of the disease during the early part of this season has undoubtedly been largely prevented. However, intensive winter work could not be extended over the entire area with the personnel available and it is now known that scolytid beetles emerged this spring from at least a few diseased trees in the lightly worked portion of the area.

A very critical situation has developed in the area this spring (1934) due to the development of overwintering infections which could not be adequately found during the winter because of the dormant condition of these trees or the lightness of the infection. The active growth of the overwintering infections became evident by wilting of the trees about May 20 and, as a result, by June 20 more than 1,000 wilted, dying, and dead trees were found by a light scouting of part of the area. It is estimated on the basis of this work that there may be as many as 5,000 wilting and dying trees in the area now. Wilting as the result of current season's infections has not become evident as yet.

While it is known that some beetle emergence occurred this spring from infected dead trees that were not found in the winter, the possibility of spread from this source is insignificant as compared with the possibilities developing in the trees killed early this season. These dead and dying trees are now being heavily attacked by the bark beetles and the trees must be removed and disposed of within 6 to 10 weeks after invasion by the beetle to avoid the risk of a serious spread of the disease from this source.

The Federal appropriation for this work during the present season is so limited that it appears necessary to confine the Federal assistance in scouting and eradication to the areas of known infection. Accordingly, it has been planned to use the available Federal funds to cooperate chiefly with the States of New Jersey, New York, and Connecticut to combat the disease where it is spreading from that area. Under this plan, the Department will use its funds chiefly for scouting and locating the diseased trees, while the States concerned will use their funds chiefly for the proper destruction of the diseased trees.

It is recognized that considerable scouting is required to determine if the disease is established in other points throughout the Eastern half of the United States. It has been determined that both the disease and the probable insect vectors have been brought into this country on burl elm logs introduced for veneer cutting. Therefore, the points under greatest suspicion at this time are the port areas through which these

logs were imported, areas along the railroad lines over which the logs were hauled to inland points, and areas about the veneer plants to which such logs were consigned.

For the present, the inspection work aimed at locating any unknown centers of infection will have to be cared for by the States concerned and such other agencies as are interested in the safety of the elms. The Department will maintain a Dutch elm disease laboratory at Morristown, N. J., and will undertake to examine at that point the suspicious material, either diseased elm bark and twigs or bark beetle specimens, sent in from various parts of the country. It is hoped that the State agencies and others interested will cooperate to the fullest extent in scouting and encouraging people throughout the elm-growing areas to send in suspicious material for examination.

Owing to the very important role that the European bark beetles may be playing in the spread of this disease, it is desirable that we obtain as much information as possible relative to the distribution of these insects. Both the disease and the insects may have been introduced into regions through the same medium.

Collecting and forwarding specimens:

Use the address "Dutch elm disease laboratory, U. S. Department of Agriculture, Morristown, N. J."

Diseased elm specimens:

Look for wilting and dying elms. Take several pieces from $\frac{1}{4}$ to $\frac{1}{2}$ inch thick and about 6 inches in length from the branches that show brownish discoloration in the present season's sapwood (the discoloration may be either continuous in the annual ring or stippled). Tie the samples together and wrap them securely in several thicknesses of strong paper for mailing.

Bark beetle specimens:

Look for evidence of the typical engravings between the bark and sapwood in dead and dying elms (in case of the European bark beetles, the egg galleries are generally parallel to the grain of the tree). Collect the mature beetles if found, and a complete engraving if possible. Kill the beetles in alcohol or formalin and place the material in a tight container (preferably strong cardboard, light wood, or metal) for mailing.

In all cases enclose or forward information giving the location where the samples were collected, together with as full a description as possible relative to the general conditions of the trees sampled and the extent of such conditions.

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